



# SA FANRPAN digest

**Issue No.: 11**

*In this issue we cover the following topics:*

1. New project alert: Food Systems Research Networks for Africa (FSNet-Africa)
2. Utilisation of the Integrated Assessment Framework to map pathways to desirable, climate-smart, nutrient-secure futures
3. Congratulations Dr Tshilidzi Madzivhandila: The new CEO of FANRPAN

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## FANRPAN DIGEST

*FANRPAN Digest is a bi-monthly report that is produced by the National Agricultural Marketing Council (NAMC) through the Agricultural Industry Trusts Division. The publication aims to communicate developments as they happen within the Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN). This issue focuses on three topics: (i) New project alert: Food Systems Research Networks for Africa (FSNet-Africa); (ii) Utilisation of the Integrated Assessment Framework to map pathways to desirable, climate-smart, nutrient-secure futures; and (iii) Congratulations Dr Tshilidzi Madzivhandila: The new CEO of FANRPAN.*

### **Contributors to this Issue:**

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## **1. NEW PROJECT ALERT: FOOD SYSTEMS RESEARCH NETWORKS FOR AFRICA (FSNET-AFRICA)**

**By**

**Nomantande Yeki**

### **1.1. Background**

Following a successful proposal made to the African Research Universities Alliance (ARUA) - UK Research and Innovation (UKRI) Global Challenges Research Fund (GCRF) Partnership Programme on research excellence call. The partnership between GCRF, funded through UKRI, and ARUA builds on the shared commitment to research, the pursuit of the Sustainable Development Goals (SDGs), and capacity building for research in Africa.

The proposal was made for the Food Systems Research Networks for Africa (FSNet-Africa) project, aimed at strengthening food systems research capabilities and translating them into evidence-based implementable policy solutions and practical interventions in support of the SDG targets for Africa. The project's aim will be accomplished through leading systems analysis research on climate-smart, nutrition-sensitive and poverty-reducing food system solutions designed and implemented in partnership with relevant food system stakeholders.

### **1.2. Institutional arrangement**

The project is a collaboration between the three lead partners: The University of Pretoria (UP), the University of Leeds (UoL) and the Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN). The lead partners will work closely with the node institutions in the six countries, namely Ghana, Kenya, South Africa, Malawi, Tanzania and Zambia, to ensure that the mandate of the project is fulfilled. FSNet-Africa will collaboratively produce context-relevant, interdisciplinary research through the creation of two-year-long structured opportunities for 30 early career research fellows from the six countries to: (i) conduct impact-focused interdisciplinary research related to African food systems; (ii) build lasting research networks; and (iii) develop their skills to translate their research impactfully. The FSNet-Africa Fellowship

programme is planned for implementation from December 2020 to December 2022.

### **1.3. Conclusion**

All work undertaken by the fellows will be co-designed and implemented in partnership with relevant country-specific policymakers, private sector role players or grassroots-level organisations that will engage with the research teams throughout the fellowship period. This process of co-creation, co-design and co-implementation positions the research for impact beyond the academic sphere, and creates opportunities for researchers from the participating institutions to build lasting collaborative relationships with stakeholders in both the United Kingdom (UK) and Africa.

## **2. UTILISATION OF THE INTEGRATED ASSESSMENT FRAMEWORK TO MAP PATHWAYS TO DESIRABLE, CLIMATE-SMART, NUTRIENT-SECURE FUTURES**

**By**

**Dr Ndumiso Mazibuko**

### **2.1. Background**

AFRICAP is providing integrated evidence for policy pathways, by bringing together state-of-the-art crop, climate and greenhouse gas emissions modelling with trade and nutrition analyses, expert knowledge, and stakeholder-driven research agendas. This Integrated Assessment Framework (IAF) is being used to map pathways to desirable, climate-smart, nutrient-secure futures. A range of possible futures, as defined by in-country participatory scenario workshops, are being explored.

### **2.2. Model Framework Description<sup>1</sup>**

The IAF modelling framework is being used to assess how food secure and climate smart possible future scenarios will be. These different possible futures are defined by the scenarios outlined in the country-specific participatory scenario workshops. By using the results of this targeted modelling, policymakers can assess how resilient agricultural policies are to climate change, with a view to designing climate-smart and nutrient-secure food systems in South Africa.

The first stage of the modelling framework is to model a range of key crops. The crops selected are

<sup>1</sup> Agricultural and Food-system Resilience: Increasing Capacity and Advising Policy – The Integrated Assessment Framework, AFRICAP 2020



those that are important from a national scale production perspective, as well as crops that are important from a policy perspective. Changes to livestock, pasture and production are also taken into account, with resulting implications for emissions and nutrition explored. The General Large Area Model (GLAM) for annual crops (Challinor *et al.*, 2004) is being used to run crop simulations that assess changes to yield mean and variability in the future. The simulations are conducted from a historical period from the year 2000 up until 2050. Planting windows, i.e. when in the year/season crops are planted, are allowed to vary in these simulations in each year. Different crop varieties are represented within the simulations by using the different maturity classes available currently. Subsequent simulations will assess the importance of changing crop varieties, including those that can maintain the length of the growing season in future climates if warming reduces durations and therefore yields.

The ECOSSE (Estimation of Carbon in Organic Soils – Sequestration and Emissions) model (Smith *et al.*, 2010) is being used to understand the implications for agricultural emissions of using different crops and land use patterns.

The second stage of the IAF modelling process is to model changes to agricultural land use. The land-use scenarios being explored are defined using a plausible upper limit to the expansion of agricultural land, a plausible lower limit, and the current extent of agricultural land use. Changes to livestock, land and the diversity of arable cropland are also varied from lower to upper bounds. It is assumed that the lower bound to agricultural land use in the future will be the current extent of land use, as agricultural land is not predicted to reduce. The upper bound is defined as using all available land for crops and livestock after protected areas (as defined by the World Database on Protected Areas) have been excluded. Using a) results from the crop modelling, providing crop yield projections in 2050, and b) future crop areas as defined by the above-prescribed land use conditions, it will be possible to calculate production changes of the above key crops up until 2050. Production changes for food commodities not modelled using GLAM are calculated using average yield projections of related crops. Some of the key crops considered in the models for South Africa include maize, soybeans and potatoes.

### 2.3. Concluding Remarks

Results from the IAF will be presented using an online user-interface tool, allowing the user to firstly

explore country-level outcomes and secondly to explore in detail the implications of the various scenarios modelled. This comprehensive, integrative approach can generate the evidence needed to aid decision-making today and in the future. Policymakers will be able to use these findings to answer key questions, including:

- Which crops should be grown, and in what way?
- How resilient will yields be?
- How will this choice affect land use, food supply, and nutritional outcomes?
- What implications does the choice of crop and land use pattern have for trade?
- What exports will be available, and what will be the reliance on imports to meet food security needs?
- How does this choice affect long-term sustainability?

### 3. CONGRATULATIONS DR TSHILIDZI MADZIVHANDILA: THE NEW CEO OF FANRPAN

By  
Elekanyani Nekhavhembe

There is a new man at the helm of FANRPAN!



**Dr Tshilidzi Madzivhandila**

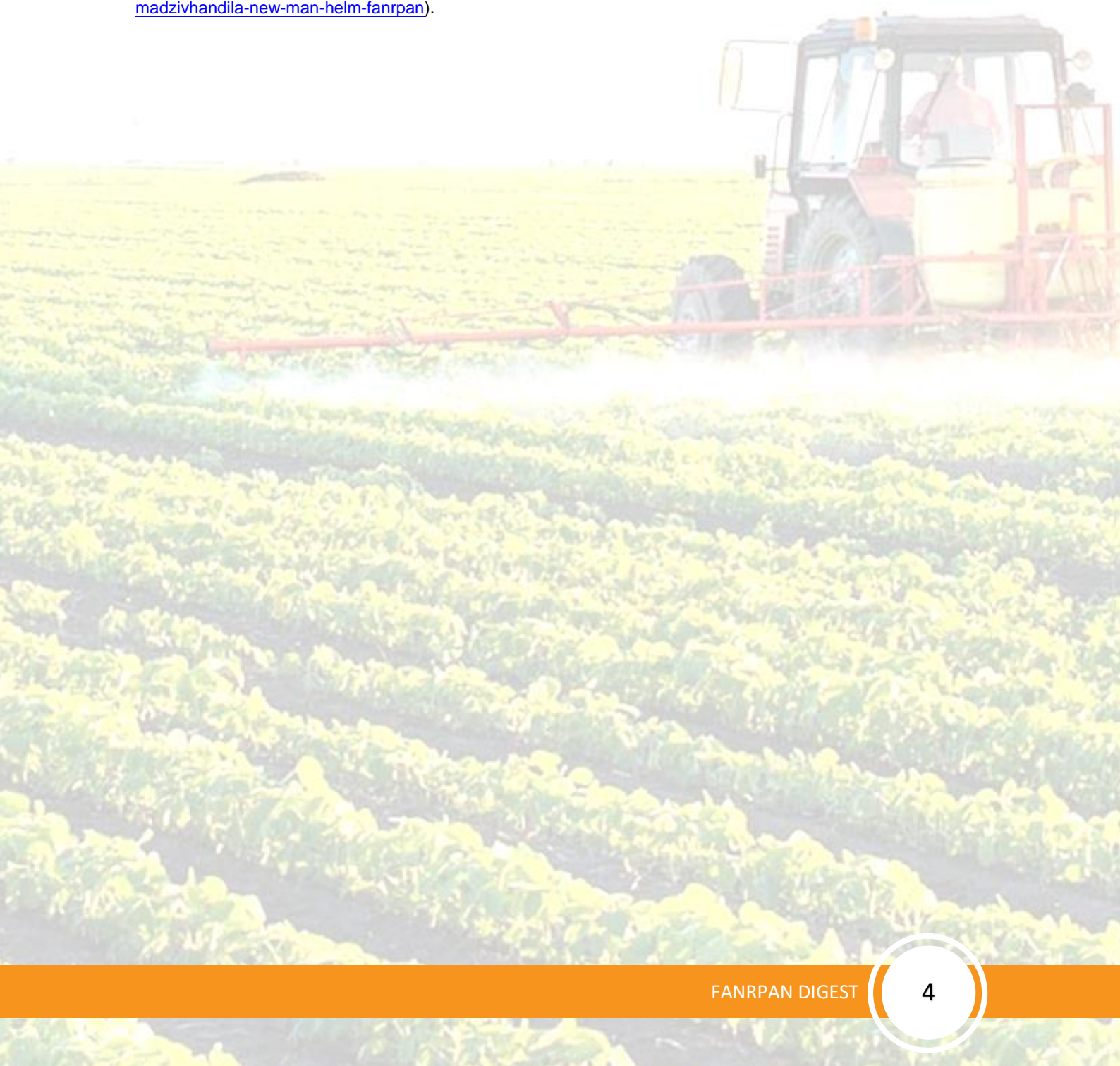
The South African node (the NAMC) is proud to announce that Dr Tshilidzi Madzivhandila has accepted responsibility for leading the Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN) team, following the departure of Mr Munhmo Chisvo. Dr Madzivhandila



is not new to the FANRPAN family, having been working at FANRPAN since February 2011.

Prior to his appointment as CEO in June 2020, Dr Madzivhandila took over as the FANRPAN interim CEO in March 2019 and, according to the Board of Governors of FANRPAN, he successfully managed to deliver against the set targets, in the process stabilising the Regional Secretariat and instilling a renewed sense of purpose amongst the staff.

The NAMC would like to wish Dr Madzivhandila success in his new role as the FANRPAN CEO. A profile of Dr Madzivhandila can be found on the FANRPAN website:  
<https://www.fanrpan.org/publication/dr-tshilidzi-madzivhandila-new-man-helm-fanrpan>).



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